No. 664,641. Patented Dec. 25, 1900.

H. H. HUNTER.

PIPE WRENCH.

(Application filed Apr. 7, 1900.)

(No Model.)

Fig. 1

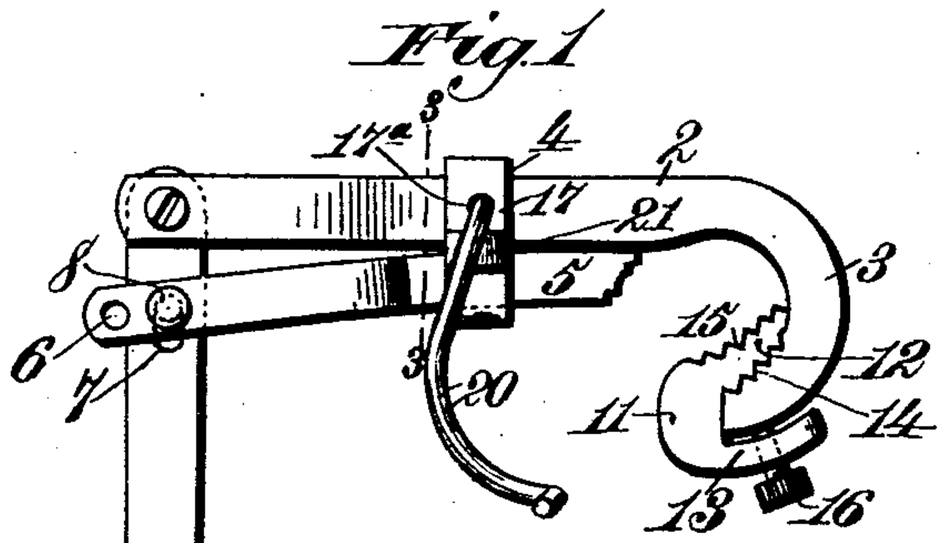


Fig. 2.

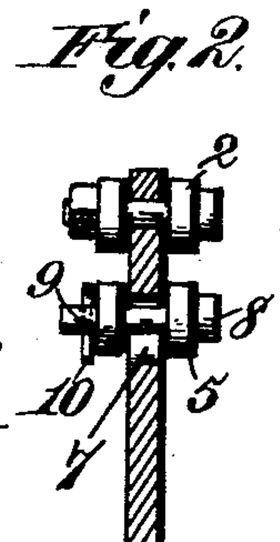


Fig. 3.

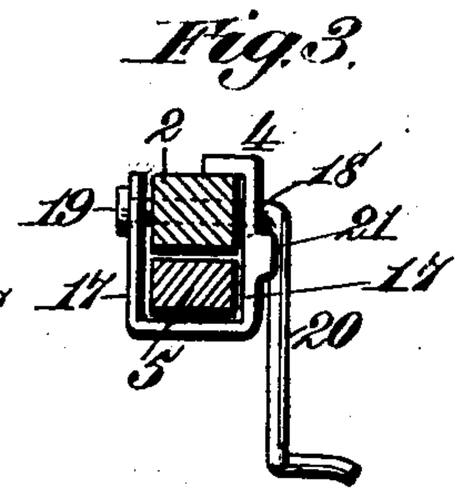


Fig. 4.

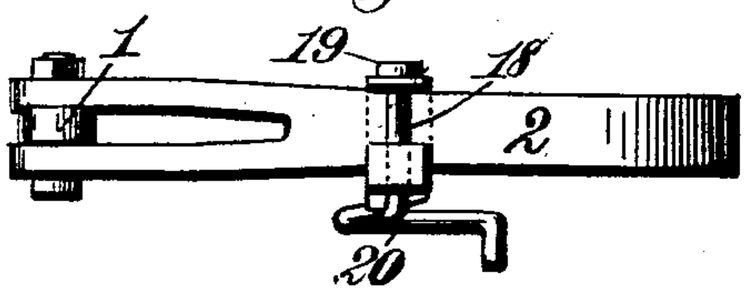
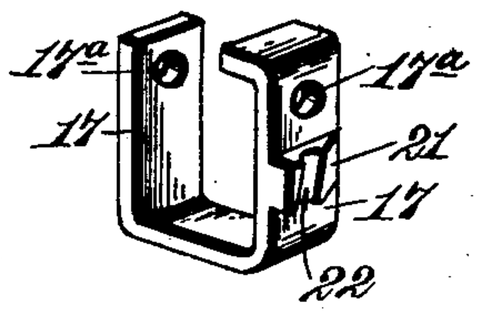


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY H. HUNTER, OF BERKELEY SPRINGS, WEST VIRGINIA.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 664,641, dated December 25, 1900.

Application filed April 7, 1900. Serial No. 11,986. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HUNTER, a citizen of the United States, residing at Berkeley Springs, in the county of Morgan and State of West Virginia, have invented new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

My invention relates to pipe-wrenches, the object of the same being to provide a wrench of this kind which is adapted to be used upon pipes of different sizes, is simple in construction, and with which a powerful leverage may be obtained.

A further object of the invention is to provide means for preventing the slipping of the wrench from the pipe after it has been applied thereto, but before it has actually secured a grip upon the pipe.

Other objects and advantages of the invention will hereinafter appear.

The invention consists of a pipe-wrench comprising a lever or handle, a main jaw pivoted thereto and having an engaging hook at one end, a guide-loop secured to said main jaw, a sliding jaw coöperating with said main jaw pivoted in an elongated slot to said lever or handle and extending through said guide-loop, and means for adjusting the point of pivotal connection between said sliding jaw and said lever.

The invention also consists of a spring attachment upon the main jaw, which may be moved so as to partially or wholly inclose the passage leading into the hooked end of said jaw for preventing the slipping of the wrench from the pipe when the same is first applied thereto.

The invention also consists in certain features and details of construction and combinations of parts which will be hereinafter more fully described and claimed.

In the drawings forming part of this specification, Figure 1 is a side elevation of my improved wrench. Fig. 2 is an edge view of the same with the upper end of the operating-lever in section. Fig. 3 is a cross-section on the line 3 3 of Fig. 1. Fig. 4 is a top plan view of the wrench, and Fig. 5 is a detail perspective view of the guide-loop.

Like reference-numerals indicate like parts in the different views.

The lever or handle 1 has pivoted to one end thereof a main jaw 2, having an engaging hook 3 upon its outer end which is provided with teeth on its inner surface. The end of said jaw opposite the hook 3 is bifurcated and straddles the end of the lever 1, to which it is pivoted. Secured to the main jaw 2 is a guide-loop 4, which extends outwardly from one side of said jaw, as clearly shown. In this loop is adapted to move what may be termed the "sliding jaw" 5, which coöperates with the hook 3 on the jaw 2 and is provided with an inclined or curved serrated engaging end. The opposite end of said sliding jaw 5 is bifurcated, embraces the lever or handle 1, and is pivoted thereto, as shown. In order to provide for the adjustment of said sliding jaw 5 on the lever 1, and thereby control the extent of throw of said jaw to accommodate the wrench to pipes of different diameters, a plurality of openings 6 6 are formed in the branches of the bifurcated end of said jaw, through which and an elongated slot 7 in the lever 1 passes the pivot-pin 8. Said pivot-pin projects at the end opposite its head beyond the sides of the jaw 5 and is provided with an opening 9, through which may be passed a split pin or cotter 10 for retaining the pivot-pin 8 in place. The said cotter, however, may be readily removed for the purpose of freeing the pivot-pin 8 and enabling the latter to be readily removed from the opening or openings 6 and readjusted in another of said openings. The elongated slot 7 in the lever 1, through which the pivot-pin 8 passes, is an important feature of my device in that it provides for a small degree of movement of the jaw 5 at its pivoted end, so as to enable the opposite or engaging end of said jaw to accommodate itself to pipes of different diameters—that is to say, to enable said sliding jaw 5 to automatically adjust itself so that the entire engaging face at its free end will be brought in contact with the surface of the pipe operated upon.

In connection with the foregoing parts and to enable the wrench to be used upon pipes of smaller diameter than those for which it was originally constructed I employ what may be termed a "supplemental jaw" or "jaw attachment" 11. This attachment is adapted to be applied to the free end of the hook 3 on the jaw 2 and to project inwardly beyond the

inner face of said hook, so as to contract the space in the concave portion of said hook. The said attachment is preferably of the same width as the hook 3 and is curved so as to form two arms or branches 12 13, which embrace the free end of the hook 3. The outer surface of the arm 12 is formed with teeth or serrations 14, corresponding to the teeth on the inner surface of the hook 3 and coöperating therewith. The opposite face of said arm 12 is formed with similar teeth or serrations 15, which serve to engage the pipe operated upon when said attachment is applied. The attachment is held in place upon the hook 3 by means of a thumb-screw 16, which extends through the arm 13 of said attachment and engages the outer face of said hook. When the attachment is not in use, it is intended that the same shall be secured to the lever 1 with the arms 12 and 13 embracing said lever and the thumb-screw 16 holding said attachment in place thereon. If desired, a recess may be formed in the opposite faces of the lever 1 for the reception of the arms 12 and 13, respectively.

The guide-loop 4, heretofore referred to, consists of a U-shaped strip of spring metal, the sides 17 17 of which are separated from each other by a distance somewhat greater than the width of the jaws 2 and 5, which they embrace. This provides for a slight compression of the sides of said loop. The said loop is held in place by means of a rod or wire 18, extending through an opening in the jaw 12 and through corresponding openings in the sides 17^a 17^a of said loop. One end of said rod or wire 18 is formed with a head 19, which engages one of the sides 17 of said loop, and opposite said head 19 the rod 18 is bent outwardly at right angles to form a curved arm 20. This arm 20 is adapted to ride over an inclined lug or cam 21 on one of the sides 17 of the loop 4 and to be maintained in its normal position away from the hook 3 of the jaw 2 by being seated in a depression 22 at one end of said cam. It is retained in this position by the spring-pressure exerted by the compression of the two sides 17 of the loop 4, and when in a position adjacent to the hook 3 it is prevented from moving rearwardly on the inclined portion of the cam 21 by the spring action exerted by said loop. This spring-controlled arm 20 of the rod 18 is designed for the purpose of preventing the wrench from slipping off the pipe when it is first applied thereto.

The operation of my improved wrench is as follows: When it is desired to turn a pipe for the purpose of unscrewing it, the wrench is grasped by the lever or handle 1 and the same is lowered upon the pipe and the hook 3 of the main jaw 2 caused to embrace said pipe. The arm 20 of the rod 18 is now moved down toward the jaw 3 until it comes in contact with the pipe. Accidental displacement or disconnection of the wrench from the pipe is effectually avoided by said arm. The lever 1 is now moved downwardly, carrying with it the sliding jaw 5, until a gripping action is effected between said sliding jaw and the hook 3 on the main jaw. A further downward or turning movement of the lever 1 will cause the pipe to be turned in the proper direction. For the purpose of obtaining a new grip the lever 1 is elevated, the wrench as a whole moved rearwardly, and the lever again depressed and turned. A great leverage is thereby obtained, and a back-and-forth or reciprocating movement of the lever of the wrench will cause a continuous turning movement of the pipe operated upon in one direction. When it is desired to remove the wrench, the arm 20 of the rod 18 is turned back into its normal position in the recess 22, and the jaw 3 may then be readily slipped from the pipe.

To adjust the sliding jaw 5 to accommodate it to a pipe of a different size, it is merely necessary to remove the cotter 10 from the opening 9 in the pivot-pin 8 and remove said pivot-pin from the opening 6 and reinsert the same in another of the openings 6.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pipe-wrench, a lever having an elongated slot therein, a main jaw pivoted thereto having a hook upon its free end, a guide-loop secured to said main jaw, a sliding jaw pivoted in said slot to said lever coöperating with the hook on the main jaw and extending through said guide-loop, and means for adjusting the point of pivotal connection of said sliding jaw with said lever.

2. In a pipe-wrench, a lever having an elongated slot therein, a main jaw pivoted to said lever having a hook upon its free end, a guide-loop secured to said main jaw, a sliding jaw extending through said loop coöperating with the hook of said main jaw and provided with a plurality of openings, and a removable pivot-pin extending through one of said openings and through the elongated slot in said lever, whereby the point of pivotal connection of said sliding jaw with said lever may be adjusted and whereby the engaging end of said sliding jaw may accommodate itself to pipes of different diameters.

3. In a pipe-wrench, the combination with two coöperating jaws, one of which is provided with a hook, of a jaw attachment adapted to be applied to said hook consisting of a toothed or serrated strip bent to form two arms which embrace the free end of said hook, and a set-screw extending through one of said arms and engaging said hook for securing said attachment in place.

4. In a pipe-wrench, the combination with two coöperating jaws, one of which is provided with a hook, of an arm constituting a guard adapted to be moved toward and away from said hook, as and for the purpose set forth.

5. In a pipe-wrench, the combination with

two coöperating jaws, one of which is provided with a hook, of an arm pivoted to one of said jaws and adapted to be moved toward and away from said hook, as and for the purpose set forth.

6. In a pipe-wrench, the combination with two coöperating jaws one of which is provided with a hook, of an arm pivotally mounted upon one of said jaws and adapted to be moved toward and away from said hook, and a spring acting upon said arm to hold the same in its normal position away from said hook and to maintain the same in its position adjacent to said hook, as and for the purpose set forth.

7. In a pipe-wrench, the combination with a main jaw having a hook thereon, and a movable jaw coöperating with said main jaw, of a guide-loop for said movable jaw, consisting of a U-shaped strip of spring metal embracing said main and movable jaws and slightly wider than said jaws, a rod having a head thereon extending through openings in the sides of said loop and through a corresponding opening in said main jaw, the said rod being bent adjacent to said loop to form an outwardly-extending, curved arm adapted to be moved toward and away from the hook on said main jaw, and an inclined lug or cam on one of the sides of said loop adapted to be engaged by said arm and formed with a recess in which said arm is adapted to be seated, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY H. HUNTER.

Witnesses:
CHAS. ALLEN,
W. H. WEBSTER.